

REMARKS

Claims 1-57 are present in this application. Claims 1-15 and 39-57 have been withdrawn. Of the examined claims, claim 16 is independent.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 22, 28, and 37 are allowable.

Claim Rejection – 35 U.S.C. § 102(b); Spitzer

Claims 16-21, 23-27, 29-34 have been rejected under 35 U.S.C. § 102(b) as being anticipated by WO/93/15589 (“Spitzer”). Claims 35, 36, and 38 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer in view of U.S. Patent 5,663,099 (Okabe). Note that the statements of rejection presented in the final Office Action are incorrect. Applicants traverse these rejections.

The final Office Action is clearly in error because the Examiner’s arguments are conclusory and no evidence has been presented to refute the arguments provided by Applicants.

The final Office Action relies solely on Figs. 25A, 25B, 25C, and an associated description on page 52 of Spitzer. In particular, the final Office Action relies on a statement on page 52, lines 4-8. In a section “Response to Arguments,” the final Office Action states “Applicant’s conclusion that essentially all devices are single crystal devices is not supported by Spitzer’s teachings” (see final Office Action at page 10, lines 4-5). However, the final Office

Action provides no evidence to refute the Applicants' argument. On the other hand, abundant evidence has been provided by Applicants to support their "conclusion."

Embodiments of the present invention are directed to a semiconductor device consisting of a single-crystal silicon thin film device and a non-single-crystal silicon thin film device in different areas on the insulating substrate.

In the section "Response to Arguments", the final Office Action states that, "Spitzer explicitly teaches that the device may be amorphous, single crystal or polycrystalline films" (see final Office Action at page 10, lines 3-4). This statement in the final Office Action indicates a lack of understanding of the teachings of Spitzer.

According to the plain teachings of Spitzer, Figures 25A-25C illustrate a process for transferring and adhering circuits of thin films of silicon to a glass substrate (Spitzer at page 52, lines 2-4). The particular statement in Spitzer relied on for Spitzer's alleged explicit teachings pertains to an early step in that process (i.e., pertains to an intermediate product). In particular, the statement relied on in Spitzer at page 52, lines 4-8, states,

"The starting structure is a silicon wafer 718 upon which an oxide layer 716 and a thin film of poly-Si, a-Si or x-Si 714 is formed using any of the previously described processes such as ISE or CLEFT." [Emphasis added]

First of all, the statement does not state that both a single-crystal thin film device and a non-single-crystal thin film device are formed on the insulating substrate (e.g., substrate 712), as required in claim 16.

Second, the processes ISE or CLEFT indicated as being "previously described" in Spitzer pertain to forming a single crystal thin film. The above statement states that a structure consisting

of poly-Si, a-Si or x-Si 714 is formed into a single crystal thin film using processes such as ISE or CLEFT. Even the title and abstract provide a clear indication of the context of the above statement. The title for Spitzer is "SINGLE CRYSTAL SILICON ARRAYED DEVICES FOR PROJECTION DISPLAYS". Furthermore, the ISE and CLEFT processes are described, for example, on page 22, as

"The CLEFT process is used to form sheets of essentially single crystal material using lateral epitaxial growth to form a continuous film on top of a release layer. For silicon the lateral epitaxy is accomplished by the ISE process or other recrystallization procedures. Alternatively, other standard deposition techniques can be used to form the necessary thin-film essentially single crystal material."
[Emphasis added]

In addition, the ISE process is introduced in Spitzer at page 5 as,

"A particular preferred embodiment uses Isolated Silicon Epitaxy (ISE) to produce a thin film of high quality Si on a release layer. This process can include the deposition of a non-single crystal material such as amorphous or polycrystalline silicon on the release layer which is then [sic] heated to crystallize the material to form an essentially single crystal silicon."

Third, there is simply no disclosure in Spitzer teaching that some parts of the thin film are subject to CLEFT/ISE while other parts are not. In fact, the invention of Spitzer requires the thin film to be a single crystal material.

In particular, Spitzer at page 2, lines 21-24, states that,

"The present invention relates to panel displays and methods of fabricating such displays using thin-films of essentially single crystal silicon in which transistors are fabricated to control each pixel of the display."

Spitzer at page 2, lines 27-30, states that,

"In this embodiment, the thin-film single crystal silicon is used to form a pixel matrix array of thin-film transistors which actuate each pixel of an LCD."

Spitzer at page 2, line 30, through page 3, line 3, states that,

"CMOS circuitry that is highly suitable for driving the panel display can be formed in the same thin-film material in which the transistors have been formed."

Spitzer at page 4, lines 8-13, states that,

"A preferred embodiment of the process comprises the steps of forming a thin essentially single crystal Si film on a release substrate, fabricating an array of pixel electrodes and thin-film enhancement mode transistors, and associated CMOS circuitry on the thin film."

At least because no evidence has been provided to refute the Applicants' arguments concerning the plain teachings of Spitzer, Applicants request that the rejection of claims 16-21, 23-27, 29-34, as well as the rejection of claims 35, 36, and 38, be reconsidered and withdrawn. (it is noted that the statements of rejection are incorrect in the final Office Action, and have been corrected herein for completeness).

Conclusion

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

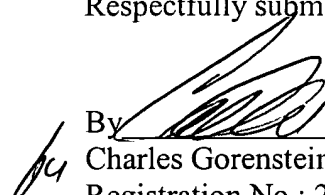
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No.

48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 14, 2005

Respectfully submitted,

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